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United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Utah State Office
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Salt Lake City, UT 84145-0155

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FRI. MARCH 6, 1998

IN REPLY REFER TO:
3809
(UT-931)

March 3, 1998

Memorandum

To: District Manager, Moab

From: Deputy State Director, Natural Resources

Subject: Verification of Summo's Reclamation Bond Using the Current Bonding Rules

As recommended in the March 6, 1997 memorandum and per your request of February 11, 1998, we have recalculated the Summo USA Corporation (Summo) bond amount to reflect the new bonding regulations which were published in the Federal Register, Friday, February 28, 1997. The attached spread sheet entitled Verification of Summo's Lisbon Valley Copper Project Bond Amount in Accordance with the Current Bonding Rules, replaces the previously submitted spread sheet attached to the March 6, 1997 memorandum entitled Summo Bond Verification Spreadsheet.

The bonding rules (43 CFR 3809.1-9) require that an operator or mining claimant who conducts operations under an approved plan of operations shall submit a financial guarantee in an amount specified by the authorized officer. The financial guarantee must be sufficient to cover 100 percent of the costs of reclamation required by State and Federal statutes and regulations and calculated as if a third party contractor were performing the reclamation after the site is vacated by the operator. The calculation must be certified at the operator's expense by a third party professional engineer registered to practice within the State in which the activities are proposed, but when the requirement of a financial guarantee is met by providing evidence of an instrument held or approved by a State Agency then certification of cost by a third party professional engineer is not required. The financial guarantee cannot be less than $2,000 per acre of fraction thereof. Also, the financial guarantee in Utah must take the form of any of the following: surety bond, cash, certificates of deposit or irrevocable letter of credit.

Attachment 1 is a Lotus spreadsheet which calculates the bond amount for all disturbance projected on Federal land during the life of the project and the disturbance projected over the next three years. The three-year Federal surface disturbance bond amount is $1,032,627. When this figure is adjusted for inflation for three years it is $1,103,586.

The initial spreadsheet attached to the March 6, 1997 Memorandum was lower because of the guidance at the time (Washington IM 90-582, and WO IM 90-582, Change 1) on how to calculate bonds. This guidance was replaced by the current bonding regulations which require 100 percent actual reclamation cost. The full cost of reclaiming the haul roads must now be used. This increase is reflected in the miscellaneous surface area total and increases all calculations from there on. Also, the increase in the final reclamation cost is due in part to adding the construction management and engineering cost to the total direct cost prior to calculating the SC Administrative fee. Previously, the SC Administrative fee was calculated using just the total direct cost. The construction management and engineering costs were added to the direct cost to calculate the SC Administrative fee because these activities will also be contracted out.

In addition, the Means Historical Index for 1998 (2.24 percent, see Attachment 2) was used as an escalation factor in this re-calculation. The 1997 Means Historical Index (2.58) was used in the previous calculation.

On December 10, 1997, the State of Utah, Board of Oil, Gas and Mining approved the form and amount of reclamation surety in the amount of $2,689,000 for Summo's Lisbon Valley Copper Project. The approved reclamation surety was posted to cover the surface disturbances created during the first three years of project operation, or 395 acres of surface disturbance, whichever comes first. Summo is required by the Board of Oil, Gas and Mining to increase this surety and receive the appropriate State and Federal approvals prior to exceeding this amount of surface disturbance or extending beyond the escalation year (2000).

Since the State approved the financial guarantee, the certification by a third party professional engineer registered to practice within Utah is not required. The financial guarantee is for a larger amount than is required for just the Federal acreage disturbed; therefore, the amount approved by the State is acceptable to the Bureau of Land Management. The per acre amount for BLM's calculation is $4,203 (Attachment 3). The per acre amount for the bond accepted by the State is $6,808. The accepted bond amount is greater than the BLM $2,000 per acre minimum requirement. Also, the form of financial guarantee, a surety bond, is an acceptable form within the state of Utah.

Please keep in mind that if the State makes a demand against the financial guarantee, thereby reducing the available balance, the operator or mining claimant must replace the amount of reduced financial guarantee with another financial guarantee instrument acceptable under 43 CFR 3809.1-9(g),(h),(i) and (j). In addition, the bond amount will increase when stage 4 of the heap leach pad construction is reached because this occurs on Federal lands. Also, if the operator modifies the approved plan in accordance with 3809.1-7, the financial guarantee must be reviewed for adequacy. If necessary, the operator or mining claimant may be required to adjust the amount of the financial guarantee to cover the estimated cost of reasonable stabilization and reclamation of areas disturbed under the plan as modified.

In addition, when all or any portion of the reclamation has been completed in accordance with the approved reclamation plan in the plan of operations, the operator or mining claimant may request a reduction in the financial guarantee. The authorized officer may reduce the financial guarantee by an appropriate amount not to exceed 60 percent of the total estimated costs of reclamation (as calculated in accordance with 3809.1-9 (h)). The authorized officer will not release that portion of the financial guarantee equal to 40 percent of the total estimated costs of reclamation until the area disturbed by operations had been revegetated to establish a diverse, effective, and permanent vegetative cover and until any effluent discharged from the area has met, without violations and without the necessity for additional treatment, applicable effluent limitations and water quality standards for not less than 1 full year. Any such release of the financial guarantee does not release or waive any claim BLM may have against any person under the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended, 42 U.S.C. 9601 et seq., or under any other applicable statutes or any applicable regulations.

The trust account, recommended in my memorandum to you dated March 6, 1997, was suggested because the following parameters were unknown in regard to the pit lakes: (1) the depth of the pit lakes that will form after mining;(2) the prediction of pit lake water chemistry; and (3) the potential for adverse impacts to the Navajo/Entrada aquifer (N-Aquifer). The first two parameters had been identified as essential to determining the third, which would dictate whether a bond would be required and its amount with respect to ground water concerns.

Since that memorandum was written, Summo has submitted to BLM extensive information. That information includes a report, "Annual Update of the Lisbon Valley Hydrogeologic System Evaluation" (Annual Update), a letter from the State of Utah classifying the N-Aquifer as Class III (attached to the Annual Update), and several technical memoranda. In general, this information summarizes modeling that predicts post-mine pit lake formation, pit lake water chemistry and impact to the N-Aquifer caused by pit lake water infiltration. It concludes that the protection levels for the N-Aquifer (based on its Class III designation) will not be exceeded by pit lake water infiltration.

Mr. Harte's review of the Water Balance Model in the Annual Update of the Lisbon Valley Hydrogeologic System Evaluation report submitted January 20, 1998, by Adrian Brown and Consultants, revealed that the numbers used in the model for the variable "Leakage Through Fractures" were reasonable approximations. He also concluded that annual runoff rate used for the variable "Surface Water Inflow" should be changed from .35 to .51 inches annual runoff. In addition, the numbers used for the "Wall Runoff to Pit" variable were .74 inches and 1.5 inches (worst case). Mr. Harte concluded that with these changes, the Water Balance Model is scientifically sound and provides a reasonable prediction of pit lake formation and the volume of water infiltrating/percolating from the pit lakes to the N-Aquifer.

The next issue is chemistry of the pit lake waters. Bill White's memorandum dated March 2, 1998 reviewed Adrian Brown Consultant's spreadsheet models. He concluded that the models appear accurate and that the ranking of the data was reasonable. The models describe the flow and water quality conditions in the pits and shallow aquifer and effects of any vertical leakage to the underlying N-Aquifer. These two approaches resulted in a conservative simulation of the mixing effects of pit-lake trace metals on the water quality of the N-Aquifer.

The Water Balance Model was independently verified by Jim Harte and the chemistry of the pit lakes was independently verified by Bill White III. They determined that the questions concerning post-mining pit lake depth, pit-lake water chemistry, and potential for adverse impacts to the Navajo/Entrada aquifer were resolved. Therefore, there is no reason to require the trust account at this point in time.

The hydrogeologic models should continue to be reviewed. The Annual Pit Lake Monitoring and Water Quality Assessment Report requirement should remain in place. If any annual review and characterization analysis reveals the water quality impacts will be unacceptable, the company should be required to post the appropriate bond to provide assurance of long-term financial resources to allow long-term monitoring and remediation of potential impacts.

If you have any questions, please contact Terry Snyder at (801) 539-4026.

Thomas L. Slater
(acting)

Attachments:
1. Verification of Summo's Lisbon Valley Copper Project Bond Amount in Accordance with the Current Bonding Rules
2. Means Historical Cost Index-1998
3. Cost per Acre Bond Calculation Verification

Verification of Summo's Lisbon Valley Copper Project Bond Amount in [illegible]ance with the Current Bonding Rules (43 CFR 3809.1-9 Financial Guarantee Re[illegible]

Attachment 1

Description	QTY	UNIT	[illegible]ONT	SUBTOTAL	PERCENT FEDERAL	SUBTOTAL	3 YR DI[illegible]ANCE	PERCENT FEDERAL	3 YEAR TOTAL
Waste Dump A--190 Acres									
Area of Top	456444.0	SY							
Area of Slope	462880.0	SY							
Scarify Top (Flat) Area	456444.0	SY	$0.20	$91,289					
12 Inches Soil on Top of Dump	152148.0	CY	$1.25	$190,185					
12 Inches Soil on Slope	154227.0	CY	$1.25	$192,784					
Seed Entire Surface	190.0	Acres	$174.00	$33,060					
				$507,318	57.00%	$289,171	0.00	57.00%	$0
Waste Dump B--94 Acres									
Area of Top	197222.0	SY							
Area of Slope	258240.0	SY							
Scarify Top (Flat) Area	197222.0	SY	$0.20	$39,444					
12 Inches Soil on Top of Dump	65741.0	CY	$1.25	$82,176					
12 Inches Soil on Slope	86080.0	CY	$1.25	$107,600					
Seed Entire Surface	94.0	Acres	$174.00	$16,356					
				$245,577	0.00%	$0	51.00	0.00%	$0
Waste Dump C--120 Acres									
Area of Top	344222.0	SY							
Area of Slope	238633.0	SY							
Scarify Top (Flat) Area	344222.0	SY	$0.20	$68,844				73.00%	$50,256
12 Inches Soil on Top of Dump	114741.0	CY	$1.25	$143,426				73.00%	$104,701
12 Inches Soil on Slope	79544.0	CY	$1.25	$99,430				27.00%	$26,846
Seed Entire Surface	120.0	Acres	$174.00	$20,880				73.00%	$15,242
				$332,581	100.00%	$332,581	88.00		
Leach pad--254 Acres									
Rinse Heap (12% of the ore neutralized rinse & evaporate 18 months)	18.0	MO							
Lime 2.5 LBS/TonsX $0.025/LBSX 5.9 M Tons	1.0	Lot	$368,750.00	$368,750					
Labor, Power, & Pump for Draindown & Evaporation (18 months)	1.0	Lot	$446,640.00	$446,640					
Subtotal for Heap Rinse & Evaporation				$815,390	21.00%	$171,232	120.00	0.00%	$0
Area of Top	788556.0	SY							
Area of Slope	441653.0	SY							
12 Inches Clay Cap on Top	262852.0	CY	$2.50	$657,130					
12 Inches Clay Cap on Slope	147218.0	CY	$2.50	$368,045					
24 Inches Crushed Rock on Top	525704.0	CY	$2.50	$1,314,260					
24 Inches Crushed Rock on Slope	294435.0	CY	$2.50	$736,088					
12 Inches Soil on Top	262852.0	CY	$1.25	$328,565					
12 Inches Soil on Slope	147218.0	CY	$1.25	$184,023					
Seed Entire Surface	254.0	Acres	$174.00	$44,196					
				$3,632,306	21.00%	$762,784	120.00	0.00%	$0
				Subtotal		$1,555,768			$197,046
Pond Area--11 Arces									
Raffinate Pond--12 Inches Soil	4852.0	CY	$1.25	$6,065					
PLS Pond--12 Inches Soil	4852.0	CY	$1.25	$6,065					
Water Runoff Pond--12 Inches Soil	8229.0	CY	$1.25	$10,286					
Seed 3 Pond Areas	11.0	Arces	$174.00	$1,914					
				$24,330	0.00%	$0	11.00	0.00%	$0
Plant &Crusher Area--25.5 Acres									
Apply 12 Inches Soil	41080.0	CY	$1.25	$51,350					
Seed Entire Area	25.5	Acres	$174.00	$4,437					
				$55,787	90.00%	$50,208	20.00	90.00%	$38,379
Haul Roads--40 Acres									
Scarify	192889.0	SY	$0.20	$38,578					
Contour	64296.0	CY	$1.25	$80,370					
Apply 12 Inches Soil	67511.0	CY	$1.25	$84,389					
Seed Entire Area	40.0	Acres	$174.00	$6,960					
				$210,297	64.00%	$134,590	21.00	64.00%	$70,880
Power Line Corridor--64 Acre									
Power Co. Requested Power Line Remain Open	64.0	Acres	$0.00	$0	70.00%	$0	64.00	70.00%	$0
Reseed Soil Stockpile Areas--40 Acres									
Reseed 40 Acres	40.0	Acres	$174.00	$6,960	46.00%	$3,202	20.00	46.00%	$1,601
Fences & Berms Around Open Pits									
Fence Around Sentinel Pit 1	5620.0	LF	$3.02	$16,972	100.00%	$16,972	1.00	100.00%	$16,972
Fence Around Sentinel Pit 2	2140.0	LF	$3.02	$6,463	100.00%	$6,463	1.00	100.00%	$6,463
Fence Around Centennial Pit	8980.0	LF	$3.02	$27,120	77.00%	$20,882	1.00	77.00%	$20,882
Fence Around GTO Pit	7410.0	LF	$3.02	$22,378	0.00%	$0	1.00	0.00%	$0
Total Pit Fencing Cost				$72,933					
Cost of Berms not Shown									
Surface Drainage Diversion Ditches									
Leach Pad Area	7473.0	CY	$1.25	$9,341	22.00%	$2,055		27.00%	$566
Plant Area	1595.0	CY	$1.25	$1,994	90.00%	$1,794		100.00%	$1,794
Crusher Area	1610.0	CY	$1.25	$2,263	90.00%	$2,036		100.00%	$2,036
Dump Areas*	13888.0	CY	$1.25	$17,986	56.00%	$9,568		53.00%	$5,071
Total Drainage Division Ditches Cost				$30,883					
					Subtotal	$247,770			$165,413
Direct Costs									
Mobilization and Demobilization	1.0	Lot		$35,000	100.00%	$35,000		75.00%	$26,250
Leach Pad and Waste Dumps	1.0	Lot		$1,555,768	100.00%	$1,555,768			$197,046
Misc. Surface Areas	1.0	Lot		$247,770	100.00%	$247,770			$165,413
Plant Dismantling	1.0	Lot		$450,000	100.00%	$450,000		75.00%	$337,500
Plug 4 IN. (Process Area) Monitor Wells (5X500FT)@ $2.20/FT	1.0	Lot		$5,500	100.00%	$5,500 3 Wells			$3,300
Plug 6 IN (Navajo) Monitor Wells (6X1,200FT)@$3.30/FT	1.0	Lot		$23,760	100.00%	$23,760 4 Wells			$15,840
Water Quality Monitoring 11 Wells X 2 Samples/YR. X 5 Yrs. X $500.00 Sample	1.0	Lot		$55,000	100.00%	$55,000 70 Samples			$35,000
Revegetation Monitoring 5 YRS. X $5,000.00/YR	1.0	Lot		$25,000	100.00%	$25,000		27.00%	$6,750
Total Direct Cost						$2,397,798			$787,099
Indirect Cost									
Engineering (5%of Total Direct Cost)	1.0	Lot		$119,890	100.00%	$119,890			$39,355
Construction Management	1.0	Lot		$180,180	100.00%	$180,180		27.00%	$48,654
SC Administrative Fee (18%)	1.0	Lot		$485,620	100.00%	$485,620		100.00%	$157,519
Total Indirect Cost						$785,700			$245,528
						$3,183,507			$1,032,627
			Inflation Adjusted 5 Years @2.24			$3,556,395	Inflation Adjusted 3 Years @2.24		$1,103,586

*Division Ditch around Waste Dump D eliminated. Diversion Ditch required in ROD on west & south sides of Sentinel Pit. Cost to reclaim is the same as or less than initial division ditch around Waste Dump D. Telephone confirmation Pat Gochnour 2/20/96

Attachment 2

State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Michael O. Leavitt
Governor
Ted Stewart
Executive Director
Lowell P. Braxton
Division Director

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February 11, 1997

TO: Reclamation Bond Estimators: Tony Gallegos, Randy Harden, Jesse Kelley, and Wayne Western

FROM: Pamela Grubaugh-Littig, Permit Supervisor PGL

RE: Means Historical Cost Index - 1998 - 2.24%

Following are the index numbers and escalation factor from the Means Historical Cost Index for Utah:

YEAR	INDEX	ESCALATION (Actual)
1995	93.1	1.93%
1996	94.9	2.42%
1997	97.2	2.36%
1998	99.5	

The future escalation factor for 1998 bond estimating is 2.24%, the average of the three previous years.

cc: Mary Ann Wright
Wayne Hedberg
Daron Haddock
Joe Helfrich

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Attachment 3

Cost per Acre Bond Calculation Verification

Description	3 Yr Federal Acreage Distrubance	
Waste Dump A	0.0	
Waste Dump B	0.0	
Waste Dump C	88.0	
Leach Pad	0.0	
Pond Area	0.0	
Plant & Crusher Area	18.0	
Haul Roads	13.4	
Power Line Corridor	0.0	Reclamation not required (44.8 acres)
Reseed Soil Stockpile Areas	9.2	
Sentinel Pit 1	38.0	
Sentinel Pit 2	9.0	
Centennial Pit	68.5	
GTO Pit	0.0	
Surface Drainage Diversion Ditches *	1.2	
Monitoring Wells (7)**	0.4	
	245.7	

3 Yr. Calculated Bond Amount	Total Federal Acreage Disturbed	
$1,032,627	245.7	$4,202.80

*Telephone Confirmation Pat Gochnour 2/20/98

**50 Feet X 50 Feet Pad Size Pat Gochnour 2/20/98. Confirmed by Rich McClure from the Moab Field Office